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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,189	09/12/2003	Darwin Mitchel Hanks	200310345-1	8310

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EXAMINER

LAMB, CHRISTOPHER RAY

ART UNIT	PAPER NUMBER
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2627

NOTIFICATION DATE	DELIVERY MODE
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03/21/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/661,189	Applicant(s) HANKS ET AL.	
	Examiner Christopher R. Lamb	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,13,15-21,25-35,38-40,45,46,51 and 52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,13,15-21,25-35,38-40,45,46,51 and 52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 15th, 2008, has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 4, 7, 13, 15, 16, 19-21, 25-29, 34, 35, 38-40, 45, 46, 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda et al. (US 2002/0191517) in view of Black et al. (US 3,426,337).

Regarding claim 1:

Honda discloses:

A method to sense the speed of an optical disk (paragraph 37) having a tracked data side on which data may be stored and an untracked non-data side (paragraph 30), the method comprising:

rotating the disk (paragraph 37);

determining a rotational speed of the disk (paragraph 37); and
controlling a rotational speed of the disk (paragraph 37).

Honda does not disclose:

A method of using electromagnetic radiation to sense the speed of the disk;
wherein the disk includes a pattern of reflective and non-reflective regions or a
pattern of magnetic and non-magnetic regions aligned circularly about the disk, the
pattern being positioned on an inner rim or on an outer rim of the disk, or both, outside a
label area in which images may be formed on the non-data side of the disk, the method
comprising:

sensing, with a stationary detector, a frequency of electromagnetic radiation
radiating from the pattern on the rotating disk;

determining from the sensed frequency a rotational speed of the disk; and
controlling, with the sensed frequency, a rotational speed of the disk.

Black discloses a method of using electromagnetic radiation to sense the speed
of a disk,

wherein the disk includes a pattern of reflective and non-reflective regions or a
pattern of magnetic and non-magnetic regions aligned circularly about the disk (Fig. 1;
column 4, lines 15 to 40), the pattern being positioned on an inner rim or an outer rim of
the disk, or both (column 4, lines 1-20: Black discloses the "data area" and the pattern
may be separate. If there are two areas, one must be either inside or outside the other,
and thus on an inner or outer rim of the disk. Of course, in Honda the "data area" is the
label area in which images may be formed on the non-data side of the disk),

the method comprising:

sensing, with a stationary detector, a frequency of electromagnetic radiation radiated from the pattern on the rotating disk (column 4, line 65 to column 5, line 5);

determining from the sensed frequency a rotational speed of the disk (column 5, lines 35-70); and

controlling a rotational speed of the disk (column 5, lines 35-70).

Black discloses that it is "highly desirable" to be able to control position in direct reference to the disk itself (column 1, lines 40-60). Note also that Black teaches detecting the radial position (column 2, line 55 to column 3, line 40) with the method also.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include in Honda wherein the method includes using electromagnetic radiation to sense the speed of an optical disk having a tracked data side on which data may be stored and an untracked non-data side (already including in Honda) that includes a pattern of reflective and non-reflective regions or a pattern of magnetic and non-magnetic regions aligned circularly about the disk (as taught by Black), the pattern being positioned on an inner rim or an outer rim of the disk, or both (as taught by Black), outside a label area in which images may be formed on the non-data side of the disk (the two areas may be separate as per Black column 4, lines 1-20), the method comprising:

rotating the disk (already present in Honda);

sensing, with a stationary detector, a frequency of electromagnetic radiation radiating from the pattern on the rotation disk (taught by Black);

determining from the sensed frequency a rotational speed of the disk (taught by Black); and

controlling, with the sensed frequency, a rotational speed of the disk (taught by Black).

The motivation would have been to control position in direct reference to the disk; Black, as noted, indicates this is highly desirable.

Regarding claim 3:

In Honda in view of Black the pattern comprises a spoke pattern (seen in Black Fig. 1).

Regarding claim 4:

In Honda in view of Black the pattern comprises a gear-tooth pattern (seen in Black Fig. 1).

Regarding claim 13:

Honda in view of Black discloses:

A device for interacting with an optical disk having a tracked data side on which data may be stored and an untracked non-data side (Honda paragraph 30) that includes a pattern of reflective and non-reflective regions aligned circularly about a rim of the disk (taught by Black as discussed above), the device comprising:

a rotation device configured to rotate the disk (Honda paragraphs 36-37);

an electromagnetic radiation source directed at the rim, wherein electromagnetic radiation radiated from the reflective regions of the pattern originates from the electromagnetic radiation source directed at the rim (part of the teaching of Black: column 4, line 50 to column 5, line 5);

an electromagnetic radiation sensor configured to sense a frequency of electromagnetic radiation radiated from the reflective regions of the pattern (Black column 4, line 50 to column 5, line 5); and

a controller coupled to the electromagnetic radiation sensor, the controller configured to, with a sensed frequency of electromagnetic radiation radiated from the reflective regions of the pattern, control a rotational speed of the disk (Honda already endeavored to control the rotation speed, as per paragraph 37. Black teaches controlling it using the electromagnetic radiation as previously discussed) and establish an absolute reference for a radial positioning on the untracked non-data side of the disk (the spoke pattern is used to establish the radial position, as taught by Black: e.g., column 2, line 55 to column 3, line 40. Thus the pattern establishes “an absolute reference for a radial positioning.”).

Regarding claims 15-16:

All elements positively recited have already been identified with respect to earlier claims. No further elaboration is necessary.

Regarding claim 19:

In Honda in view of Black the rotation device includes:

a spindle coupled to the disk when the disk is installed in the device (seen in Honda Fig. 6) and

a motor coupled to the spindle (labeled "spindle motor" in Fig. 6).

Regarding claim 20:

In Honda in view of Black the controller includes a motor controller configured to control the motor (Honda paragraphs 36-37).

Regarding claim 21:

All elements positively recited have already been identified with respect to earlier claims. No further elaboration is necessary.

Regarding claim 25:

In Honda in view of Black the controller includes a radial positioner for controlling a placement of a beam of the electromagnetic radiation on the disk (Honda paragraph 38).

Regarding claim 26:

Honda in view of Black discloses:

A mass storage device having media that is rotateable, comprising:

means for sensing electromagnetic radiation with a stationary sensor from a pattern of reflective and non-reflective or magnetic and non-magnetic regions aligned circularly about a rim of a trackless non-data side of the media, the pattern being positioned on an inner rim or on an outer rim of the disk, or both, outside a label area in which images may be formed on the non-data side of the disk (taught by Black as discussed above);

means for controlling the rotational speed of the media based on the sensed electromagnetic radiation (taught by Black as discussed above);

means for positioning radially over the label area an electromagnetic source with respect to a surface of the trackless non-data side of media based on the sensed electromagnetic radiation (this is part of the teaching of Black: Black's method detects both the rotating speed and the radial position, as in Black column 2, line 55 to column 3, line 40); and

means for controlling exposure of the media by the electromagnetic source in conjunction with the means for controlling and the means for positioning (taught by Black).

Regarding claims 27-29 and 34::

All elements positively recited have already been identified with respect to earlier claims. No further elaboration is necessary.

Regarding claim 35:

Honda in view of Black discloses a mass storage device as discussed above.

Honda in view of Black does not disclose wherein the means for controlling rotational speed includes a motor controller configured to control the rotational speed of the media to 0.25 meters/second at an accuracy of 0.02 percent.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include these speeds and accuracies.

The motivation would have been: in the course of routine engineering optimization/experimentation to determine the necessary print accuracy. Moreover,

absent a showing of criticality, i.e., unobvious or unexpected results, the relationships set forth in these claims are considered to be within the level of ordinary skill in the art.

Additionally, the law is replete with cases in which the mere difference between the claimed invention and the prior art is some range, variable or other dimensional limitation within the claims, patentability cannot be found.

It furthermore has been held in such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range(s); see *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Moreover, the instant disclosure does not set forth evidence ascribing unexpected results due to the claimed dimensions; see *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338 (Fed. Cir. 1984), which held that the dimensional limitations failed to point out a feature which performed and operated any differently from the prior art.

Regarding claim 38:

All elements positively recited have already been identified with respect to earlier claims. No further elaboration is necessary.

Regarding claims 39, 40, and 45:

These claims are to a program storage system readable by computer for implementing the earlier method claims: Honda Fig. 6 shows that the apparatus is controlled by a computer. All other elements of these claims have already been identified with respect to earlier rejections.

Regarding claim 46:

Honda in view of Black discloses a program storage system as discussed above.

Honda in view of Black does not disclose wherein “controlling a rotational speed of the disk includes controlling the rotational accuracy of a spindle onto which the disk is fixed to allow placement to within a quarter of a pixel at 600 dpi on the disk.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include this print accuracy.

The motivation would have been: in the course of routine engineering optimization/experimentation to determine the necessary print accuracy. Moreover, absent a showing of criticality, i.e., unobvious or unexpected results, the relationships set forth in these claims are considered to be within the level of ordinary skill in the art.

Additionally, the law is replete with cases in which the mere difference between the claimed invention and the prior art is some range, variable or other dimensional limitation within the claims, patentability cannot be found.

It furthermore has been held in such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range(s); see *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Moreover, the instant disclosure does not set forth evidence ascribing unexpected results due to the claimed dimensions; see *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338 (Fed. Cir. 1984), which held that the dimensional limitations failed to point out a feature which performed and operated any differently from the prior art.

Regarding claim 51:

All elements positively recited have already been identified with respect to earlier claims. No further elaboration is necessary.

Regarding claim 52:

The method of Honda in view of Black includes wherein sensing the reference pattern comprises scanning the reference pattern with a first light and detecting light reflected from the pattern (taught by Black as discussed above) and the method further comprises, based on the establishing, positioning a second light radially on the disk (the second light is the printing laser of Honda).

4. Claims 17, 30, and 32 rejected under 35 U.S.C. 103(a) as being unpatentable over Honda in view of Black as applied to the claims above, and further in view of Nakamura (4,987,301).

Regarding claim 17:

Honda in view of Black discloses a device as discussed above.

Honda in view of Black does not disclose wherein “the electromagnetic radiation source includes a coherent electromagnetic radiation source.”

The electromagnetic radiation source was taught by Black. Black does not disclose whether the source is coherent or non-coherent (although, since Black was filed in 1964, it is probably non-coherent).

Nakamura discloses that electromagnetic radiation sources used to track disc speeds are typically coherent (lasers: Nakamura, column 1, lines 5-30).

It would have been obvious to include in Honda in view of Black wherein the electromagnetic radiation source is a coherent source, because coherent and non-

coherent sources are used in the same environment, for the same purpose, and achieve the same result (this is shown by Nakamura's "typically:" clearly it is not necessary). Furthermore, one of ordinary skill would have expected Applicant's invention to work equally well with a non-coherent source.

Regarding claims 30 and 32:

These claims are similar to claim 17 and similarly rejected.

5. Claims 18, 31, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda in view of Black as applied to the claims above, and further in view of Satoh (US 5,119,363).

Regarding claim 18:

Honda in view of Black discloses a device as discussed above.

Honda in view of Black does not disclose wherein "the electromagnetic radiation source includes a non-coherent electromagnetic radiation source."

The electromagnetic radiation source was taught by Black. Since Black was filed in 1964, the electromagnetic radiation source taught by Black is probably a non-coherent source; nonetheless, Black does not explicitly disclose this.

Satoh disclose wherein an electromagnetic radiation source (used in the same environment for the same purpose) is a non-coherent radiation source. Satoh discloses this avoids the need to use a laser (column 5, lines 1-20; column 2, lines 45-55).

It would have been obvious to one of ordinary skill in the art to include in Honda in view of Black wherein the electromagnetic radiation source includes a non-coherent electromagnetic radiation source.

The motivation would have been to avoid the need to use a laser (this would be cheaper).

Regarding claims 31 and 33:

They are similar to claim 18 and are similarly rejected.

Response to Arguments

6. Applicant's arguments filed February 15th, 2008 have been fully considered but they are not persuasive.

Applicant's first argument is that the invention claims establishing an absolute radial location based on a pattern outside the label area as a reference for positioning inside the label area, whereas Black's pattern extends over the entire disc, and thus would be inside the label area of Honda.

However, Black discloses (column 4, lines 1-20), that the pattern and the "data area" (in this case, the label area of Honda) may be separate. Therefore Black discloses establishing an absolute radial location based on a pattern outside the label area as a reference for positioning inside the label area.

Applicant next argues that the combination of Honda and Black renders Honda inoperative. Applicant's argument is that Black's reference pattern, superimposed over Honda's label area, would "obliterate" the label area, rendering the disk useless.

However, as noted above, Black discloses that the "data area" and the pattern may be separate. In that case Black's pattern would not "obliterate" the label area, and the combination would be operable.

Finally, Applicant argues that Black "teaches away from open loop position control." Applicant argues that in a closed loop system, the position of the moving part is continually detected, whereas in an open loop system it is not, and that Black teaches a closed loop system whereas Applicant's invention is an open loop system.

This is irrelevant. Applicant does not claim an "open loop system," and regardless of any differences that may exist between the invention and the prior art of record, the existing claim language is met by the disclosure of Honda in view of Black. Honda in view of Black establishes an absolute radial position (that is, it establishes the current position, and that position is used as a reference for radial positioning) based on a pattern outside the label area as a reference for positioning inside the label area (since Black teaches the pattern can be separate from the "data area").

The Examiner notes that the amended claim language in the independent claims was previously present in dependent claim 7, etc., and this section of Black (column 4, lines 1-20) was previously cited in the rejection of that claim. The amended subject matter is not new, and the grounds and art of record have not changed.

Conclusion

7. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued

examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Lamb whose telephone number is (571) 272-5264. The examiner can normally be reached on 9:00 AM to 5:30 PM Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on (571) 262-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joseph H. Feild/
Supervisory Patent Examiner, Art
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CRL 3/14/08